U.S. Department of Transportation
Federal Aviation Administration
Standard

PREPARATION OF LOGISTICS

SUPPORT ANALYSIS RECORD (LSAR) DATA

FOREWORD

This standard sets forth a comprehensive methodology for the development of Logistics Support Analysis Record (LSAR) documentation and imposes the requirements of MIL-STD-1388-2A, DOD Requirements for a Logistics Support Analysis Record. MIL-STD-1388-2A provides a standardized list of data elements to be used in the preparation of LSAR data. The procedures for completing certain data elements require further definition in order to meet specific Federal Aviation Administration (FAA) requirements. This standard also identifies the MIL-STD-1388-2A data elements that require new or modified preparation procedures, as well as the instructions for completing the data element entries. Since the requirements of this standard rely heavily upon the requirements contained in MIL-STD-1388-2A, each update of MIL-STD-1388-2A will be reviewed and this standard revised accordingly.

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APPENDIXES

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1. SCOPE

1.1 Scope. This standard applies to all National Airspace System (NAS)
projects for which Logistics Support Analysis Record (LSAR) data will be
generated during their acquisition phases.

1.2 Purpose. The purpose of this standard is to impose the use of
MIL-STD-1388-2A for LSAR development. This standard also prov.... ...
preparation instructions for completing the MIL-STD-1388-2A data ....
require new or modified preparation procedures. All ot'... data ....
be completed in accordance with MIL-STD-1388-2A, and the s........ ....
contained in the contract.

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2. APPLICABLE DOCUMENTS

2.1 <u>Government documents</u>. The following documents of the issue in effect on the date of invitation for bids or request for proposal, form a part of this standard to the extent specified herein. In the event of conflict between the documents referenced herein and the contents of this standard, the contents of this standard shall be considered a superseding requirement.

STANDARDS:

Federal Aviation Administration

FAA-STD-028   Contract Training Programs

Military

MIL-STD-1388-2A   DOD Requirements for a Logistic Support Analysis
                     Record

Copies of specifications, standards, drawings, and publications required by suppliers in connection with specified procurement functions should be obtained from the procuring activity or as directed by the contracting officer.

2.2 <u>Non-Government documents</u>. None.

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3. REQUIREMENTS

3.1 <u>General</u>. LSAR data element field lengths and data entry requirements shall be in accordance with MIL-STD-1388-2A. No tailoring of data element field length or format shall be done due to the standardization of content and Automatic Data Processing (ADP) capability.

3.2 <u>Data element description (DED)</u>. Procedures for the completion of DED's shall be in accordance with MIL-STD-1388-2A except as provided for in Appendix I of this standard.

4. QUALITY ASSURANCE PROVISIONS

This section is not applicable to this standard.

5. PREPARATION FOR DELIVERY

This section is not applicable to this standard.

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6. NOTES

6.1 Definitions.

6.1.1 Part-peculiar. A part-peculiar is any item that does not meet the definition of a part common, or that is designed, developed, assembled, or fabricated by the contractor or vendor specifically for use with the end article being procured. An item is part-peculiar if it is not listed explicitly in a published vendor's or supplier's catalog or is not readily available as a bona fide established stock item at the time the contract or order was placed. A part common that has been modified in any way to accommodate a new environment shall also be a part-peculiar. A part common that has been selected for a higher tolerance than a routine production tolerance (such as a transistor or integrated circuit) either by contractor or the contractors purchase specification to a vendor shall be part-peculiar. Parts common that have been selected to be used as a pair or set shall be considered as part-peculiar.

6.2 Abbreviations and Acronyms. The following are abbreviations and acronyms used in this standard.

ADP	Automatic Data Processing
CMD/AGY	Command/Agency
Crit	Criticality Code
DED	Data Element Description
DOD	Department of Defense
FAA	Federal Aviation Administration
ICC	Item Category Code
KPL	Knowledge Proficiency Level
LCN	LSA Control Number
LSAR	Logistics Support Analysis Record
MIL	Military
MRRI	Maintenance Replacement Rate I
NAILS	National Airspace Integrated Logistics Support
NAS	National Airspace System
PCCN	Provisioning Contract Control Number
PHS&T	Packaging, Handling, Storage, and Transportation
PRS	Provisioning Requirements Statement
PSIC	Provisioning System Identifier Code
SPL	Skill Proficiency Level
SSC	Skill Specialty Code
SMR	Source, Maintenance, and Recoverability
STD	Standard
UID	Unit Identifier Code

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(b)   The MRRI shall be expressed as a whole number, or zero, and two
decimal places. The computation shall be made to four decimal
places then rounded off to the nearest three decimal places. Not
to be shown is the decimal point which will be assumed to be
between the 4th and 5th digits, 0000.0000. Where more than one
identical item is used in an equipment unit, the maintenance
factor shall be an average of the total in-use quantity.

(c)   In computing the MRRI, select one of the three available program
units to obtain a meaningful entry for items which may range from
those having high removal rate to items having a low removal
rate: program unit 1 for 1,000 operating hours, program unit 2
for 10,000 operating hours and program unit 3 for 100,000
operating hours. The code number 1, 2, or 3 shall be entered in
the 8th position, for example, 00000001, 00000002, or 00000003.

(d)   EXAMPLES:

1.   Assume an item is predicted to fail after 8,000 hours of
operation. Use the program unit 1 and compute the MRRI.

$$\frac{1,000 \text{ hours, Program Unit 1}}{8,000 \text{ hours, Operating Time}} = 00001251 \text{ MRRI}$$

2.   Assume an item is predicted to fail after 18,000 hours of
operation. Use the program unit 2 and compute the MRRI.

$$\frac{10,000 \text{ hours, Program Unit 2}}{18,000 \text{ hours, Operating Time}} = 00005562 \text{ MRRI}$$

3.   Assume an item is predicted to fail after 1,500,000 hours of
operation. Use the program unit 3 and compute the MRRI.

$$\frac{100,000 \text{ hours, Program Unit 3}}{1,500,000 \text{ hours, Operating Time}} = 00000673 \text{ MRRI}$$

4.   Assuming two identical items are serving different functions
within the same equipment that have different operating time
of 20,000 hours and 90,000 hours, selection of the program
unit 2 and averaging the operating times provides the
following MRRI.

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$$\frac{10,000 \text{ hours, Program Unit 2}}{55,000 \text{ hours, Average Operating Time}} = 00001822 \text{ MRRI}$$

(e)   Application of the MRRI will be accomplished by the FAA based
upon the supply support determined appropriate for the
maintenance objectives of the specific end article.

211   Managing Command/Agency   10   X   L   —
(MANAGING CMD/AGY)

The managing agency of all data entered into the LSAR data base shall
always be "FAA", except in cases of joint FAA and Department of Defense
(DOD) system procurements in which case the MANAGING CMD/AGY code shall
reflect all agencies in accordance with which agency has primary
authority (i.e. FAA/DOD means the FAA has primary authority, whereas,
DOD/FAA would show the DOD as the primary authority).

340   Provisioning Contract Control   6   X   L   —
Number (PCCN)

The PCCN will consist of the year in which the contract was awarded,
followed by the project identification number. An example is, 860201
("86" for the year of the contract and "0201" for the project
identifier).

345   Provisioning System   3   X   L   —
Identifier Code (PSIC)

A unique code assigned to a system/end item. This code will be the
end-item LSA Control Number (LCN) as assigned by the National Airspace
Integrated Logistics Support (NAILS) Master Plan.

423   Skill Speciality Code (SSC)   7   X   L   —

This code is composed of a string of seven (7) individual codes.
Positions 1 through 4 identify the task characterization codes
required, and positions 5 through 7 establish the training
characterization for the task. When compiled, these 7 characters
identify an SSC for a task in accordance with the requirements of
FAA-STD-028.

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A. First Position. Criticality code (Crit).

Noncritical. This code involves tasks which are   N
noncritical to the operation of the system/equipment.
This may include tasks as simple as flipping a switch
to activate a radio transmitter or loading a magnetic
tape on a tape driven unit.

Semicritical. This code involves tasks which, when   S
performed improperly, may result in some system/equip-
ment degradation, equipment damage, personnel injury,
and/or security degradation. A task such as soldering
a component in a piece of equipment would fall into this
category.

Critical. This code involves tasks that must be   C
performed correctly because of possible adverse impact
on mission effectiveness or serious/fatal injury. This
may include a task such as flight checking an Instrument
Landing System for accuracy.

B. Second Position. Newness (of task).

This code involves tasks that are standard to the   1
FAA at the time system development was initiated. The
tasks require no new knowledge or skills.

This code involves existing tasks performed with new/   2
modified equipment. Familiarization with the location,
use, and installation of the equipment may be required.

This code involves new tasks with standard equipment.   3
The new tasks may require new knowledge and skills.

This code involves new tasks performed on new/modified   4
equipment. These tasks may require new knowledge and
skills.

C. Third Position. Skill demand.

The perceptual and motor skills for task accomplishment   A
can be met by all personnel, these requirements are with-
in the capabilities of all FAA personnel.

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The perceptual ability required is the sensing of a
nonprecision indication, distinguishing primary colors,
a coarse texture, odor or no odor, taste or no taste,
hot or cold, noise or no noise, movement or no movement.
The perceptions are of a coarse, noncritical type which
are readily learned. The physical dexterity is of non-
precision manipulations which can be easily learned.
These acts consist of noncritical and coarse motions for
adequate results such as flipping a switch to turn on t.
runway lighting system.

The perceptual ability required is the accurate and/or
coordinated sensing of one or more fixed or variable
indications, such as quantity indications of an instru-
ment, distinguishing relative positions of objects,
shapes of objects, kinds of odor, kinds of taste, dif-
ferences in weight, relative frequency, and rates of
movement. The physical dexterity required is one of a
coordinated and/or precise type that must be learned
and may require practice. These acts consist of accurat ,
coordinated, and timely motions to achieve the optimum
results, such as a pilot executing an instrument landi.
system approach or a controller entering information on
a data block with the trackball/keyboard.

The perceptual ability required is a critical, precise
and/or coordinated sensing of one or more fixed or
variable indications such as: distinguishing quality in-
dications of an object; relative motion; degrees of
comparison; simultaneous or time critical events; dif-
ferences in pressure; amounts and kinds of odor; amounts
and kinds of tastes; shades and brilliance of colors;
volume of sound, and the frequency, rate, and direction
of movement. The physical dexterity required is of
critical, exact, coordinated, and/or variable type of
activity that must be practiced to maintain the pro-
ficiency to achieve the necessary results. This can be
learned by training and repetitive practice. These acts
consist of precise, timely, coordinated, and/or variable
type motions resulting in crucial responses such as a
controller resolving a conflict between two aircraft, or
a technician adjusting the radar gain with a piece of test
equipment.

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D. Fourth Position. Knowledge Demand.

Common Knowledge. The knowledge demands can be met by
all personnel.

Associating. Associating, naming, or responding to a   2
specific input. The person associates a response with a
specific input only. The response may be vocal, sub...,
written or motor. Examples include: naming objects,
geographical fixes, people or events; advising a pilot
after receiving low-altitude alert.

Chaining, verbal. Recalling of long verbal sequences   3
that must be recalled in a specific sequence, and no
other sequence, and may require practice. Examples in-
clude: memorizing numbers, issuing clearances, verbatim
learning of textual materials, and stating rules or
regulations.

Chaining, motor. Chaining of individual inputs, actions, 4
and outputs in a specific sequence, and no other sequence.
These sequences involve nonverbal motor responses. They
generally require some degree of eye-hand coordination and
manipulative abilities and may require practice. Exampl.
include: adjusting a radar display; turning on the run
lights; typing data on a keyboard; or any other perform...
involving use of legs, arms, hands, or other parts of the
body.

Discriminating. Making different responses to the
different members of a particular class. Being able to
distinguish among inputs and respond differently to each
may require practice, i.e. having to tell the differences
among similar gauges on a panel.

Classifying. Responding in a single way to all members   6
of a particular class of observable events and which re-
quires practice. Seeing the essential similarity among
a class of objects, people, or events which call for a
single response (generalizing). Seeing the essential
differences between those inputs which are members of
a class and those which are not discriminating, i.e.,
classifying aircraft as being heavy, military, fighter
etc.; classifying pilot's actions as inappropriate for
FAA regulations; and classifying electronic components
by color code.

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<u>Rule Using</u>. Applying a rule to a given situation or   7
condition by responding to a class of inputs with a class
of actions requires practice. Relating two or more
similar contents in the particular manner of a rule. A rule
states the relationship among concepts. It is helpful to
think of rules and principles as "if-then" statements, i.e.
"If an object rolls, then it is round". If you convert a
statement of an "if-then" statement, then it is a rule or
principle. If aircraft are above Flight Level 290, then
separate aircraft by 2,000 feet vertically. If less than
40 miles from the radar antenna, then separate Instrument
Flight Rules aircraft by 3 miles horizontally.

<u>Problem Solving</u>. Solving a novel problem by combining   8
previously learned rules to create a higher-order rule
and which requires practice. May involve generating new
rules which receive trial-and-error use until the one
which solves the problem is found, i.e. establishing a
new arrival sequence to the airport due to an aircraft in
distress; transitioning to nonradar procedures after loss
of radar; or diagnosing a faulty electronic component.

E.   Fifth Position. Practice Required (Prac.).

<u>No practice required</u>. This entry should be used for tasks   0
which do not require either knowledge or skill practice.

<u>Practice on hardware is required</u> (e.g., operational hardware, 1
simulators, etc.). Use the following considerations to
identify tasks requiring practice on hardware.

Use the Training Characterization Code Selection Checklist
(page 12) to determine the code. If the answer to two or
more of the questions in the checklist is "Yes", then enter
a "1" in the "Prac" column. If the answer is yes to only
one of the questions in the checklist, then place the letter
of the question answered in the "Prac" column. This task
will then have to be reviewed to ensure complete analysis.
If the answer is "No" to all of the questions in the
checklist, then enter a "2" in the "Prac" column.

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Training Characterization Code Selection Checklist	Answer
(a) Is the skill or knowledge difficult to execute? For example, skills involving precise adjustments or complex actions, lengthy procedures, or difficult to execution.	Yes/No
(b) Is the display of skill or knowledge required under unusual circumstances, such as a noisy or limited access environment?	Yes/No
(c) Is the timing or error criteria so strict as to require experience performing that task?	Yes/No
(d) Is the "skill demand" entry of the task characterization code either C or D?	Yes/No
(e) Does the operator receive feedback from the equipment such as visual, factual, or auditory cues?	Yes/No
(f) Are new/modified support tools or test equipment required to employ the skills or knowledge?	Yes/No
(g) Is the "criticality" code of the task characterization code "C" (critical)?	Yes/No
(h) Is actual task performance infrequent, such as radar antenna replacement or an emergency procedure?	Yes/No
(i) Is the task performed either so frequently or involve such a large amount of time on the job that substantial practice on hardware is necessary to obtain initial proficiency?	Yes/No

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Practice on other media is required. This entry shall be circled if all answers to the considerations listed in 2 above for the task were "No.".   2

F.   Sixth Position. Knowledge Proficiency Level (KPL). Indicates the knowledge and experience required to successfully perform a task.

Common knowledge. The knowledge demands can be met by all personnel assigned to the FAA specialty. Training is not required.   A

Learn general subsystem/system characteristics. Knowledge demands require familiarization with the system description, location, installation, and use of individual subsystem.   B

Learn procedures. Knowledge demands require the ability to either determine or recall step-by-step procedures to accomplish tasks.   C

Learn principles, concepts, and rules. Knowledge demands require the ability to apply previously learned principles, concepts, and rules to accomplish tasks.   D

Learn complete (troubleshooting) theory. Knowledge demands require the ability to use previously learned theory to predict, identify, and resolve problems related to tasks.

G.   Seventh Position. Skill proficiency level (SPL). Indicates the skill and experience required to successfully perform a task.

Skill training not required. The skill demands can be met by all personnel assigned to the particular position.   0

Proficient level. Skill demands require the ability to accomplish non-time critical and routine tasks within the predicted task times and at acceptable levels of accuracy (with limited supervision).   1

Highly proficient level. Skill demands require the ability to accomplish either time critical, emergency action, or complex tasks within predicted task times and without error (without supervision).   2

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